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(54) Title: OIL-IN-WATER EMULSION CONTAINING AN ELECTROLYTE

(57) Abstract

Disclosed is an oil-in-water emulsion containing an electrolyte, a crystalline inorganic mineral clay, a peptizer, and an emulsifying carrier. The composition is in the form of oil-in-water emulsion.

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OIL-IN-WATER EMULSION CONTAINING AN ELECTROLYTE

FIELD

The present invention relates to a topical composition. In particular, it relates to a topical composition containing electrolyte in the form of emulsion.

BACKGROUND

Consumers frequently use cosmetic products to care for their skin as well as to improve the health and/or physical appearance of their skin. Skin conditions consumers typical seek to treat include rough and/or broken skin as well as lightening skin and treating hyperpigmentation (such as age spots, freckles, and brown patches associated with skin aging or environmental damage to the human skin).

Numerous cosmetic products have been described in the art, depending on the needs, for example, skin lightening, skin treatments, and the like. There is also a wide variety of materials and/or ingredients used for such products. These materials and/or ingredients can be categorized into more than one group by its functionality or its efficacy. Electrolytes, which separate into cationic and anionic ions in water, are ingredients commonly used to cosmetic compositions. Sodium citrate and disodium ethylenediaminetetraacetate are examples of electrolytes, which are also classified as a pH adjuster and a preservative, respectively.

Electrolytes, however, tend to cause deterioration of an emulsion. The electric charges bestowed by the electrolyte component can lead to agglomeration of internal phase of the emulsion, causing the emulsion to undesirably separate into two phases. In addition, these electric charges may cause breakdown of thickener system's gel network. Consequently, electrolytes used in compositions can result in a reduction of emulsion stability.

Based on the foregoing, there is a need for stable composition containing an electrolyte in emulsion.

SUMMARY

The present invention is directed to a composition containing an electrolyte, a crystalline inorganic mineral clay, a peptizer, and an emulsifying carrier. The composition is in the form of an oil-in-water emulsion.

These and other features, aspects, and advantages of the present invention will become better understood from a reading of the following description, and appended claims.

DETAILED DESCRIPTION

While the specification concludes with claims particularly pointing out and distinctly claiming the invention, it is believed that the present invention will be better understood from the following description.

All percentages and ratios used hereinafter are by weight of total composition, unless otherwise indicated.

All measurements referred to herein are made at 25°C unless otherwise specified.

All percentages, ratios, and levels of ingredients referred to herein are based on the actual amount of the ingredient, and do not include solvents, fillers, or other materials with which the ingredient may be combined as a commercially available product, unless otherwise indicated.

All publications, patent applications, and issued patents mentioned herein are hereby incorporated in their entirety by reference. Citation of any reference is not an admission regarding any determination as to its availability as prior art to the claimed invention.

Herein, "comprising" means that other steps and other ingredients which do not affect the end result can be added. This term encompasses the terms "consisting of" and "consisting essentially of".

Herein, "topical application" means to apply or spread a material onto the surface of the skin.

Herein, "skin lightening" refers altering the appearance of the skin to a brighter, lighter, and/or whitener appearance, and improving hyperpigmentation as compared to pre-treatment.

Herein, "dermatologically-acceptable" means that the compositions or components thereof so described are suitable for use in contact with human skin without undue toxicity, incompatibility, instability, allergic response, and the like.

Herein, "safe and effective amount," means an amount of a compound or composition sufficient to significantly induce a positive benefit, preferably a positive skin appearance or feel benefit, including independently the benefits disclosed herein, but low enough to avoid serious side effects, *i.e.*, to provide a reasonable benefit to risk ratio, within the scope of sound judgment of the skilled artisan.

All ingredients such as actives and other ingredients useful herein may be categorized or described by their cosmetic and/or therapeutic benefit or their postulated mode of action. However, it is to be understood that the active and other ingredients useful herein can in some instances provide more than one cosmetic and/or therapeutic benefit or operate via more than one mode of action. Therefore, classifications herein are made for the sake of convenience and are not intended to limit an ingredient to the particularly stated application or applications listed.

The composition of the present invention includes an electrolyte, a crystalline inorganic mineral clay, a peptizer, and an emulsifying carrier. Preferably, the composition of the present invention is in the form of an oil-in-water emulsion.

Emulsions generally contain a hydrophilic phase (*e.g.*, hydrophilic liquid carrier) and a hydrophobic phase (*e.g.*, oil or oily material). As well known to one skilled in the art, the hydrophobic phase will be dispersed in the hydrophilic phase to form a continuous and/or dispersed phase, depending on the composition and/or ingredients. The dispersed phase sometimes can exist as small particles or droplets in emulsion.

Without being bound by theory, it is believed that electrolytes in emulsion decrease an electrostatic repulsive force between the dispersed droplets. Such electrostatic interaction is believed to facilitate agglomeration of the droplets. Should such agglomerate become significant, the emulsion may undesirably separate into two phases. In addition, such electrolytes may further cause breakdown of the gel network of the thickener (such as polyacrylate) in composition.

Increasing the level of electrolytes in composition will typically improve the desired efficacy of the electrolyte. For example, increasing the level of sodium citrate (a pH adjuster which is also an electrolyte) will generally improve the stability benefits of the composition. Unfortunately, compositions having such

increased levels of electrolytes tend to be unstable, due to the agglomeration of droplets and the breakdown of the gel network of the thickener.

However, we have discovered including a crystalline inorganic mineral clay and a peptizer in a composition containing an electrolyte can improve the stability of the composition, even when the composition contains relatively high levels (*i.e.*, more than 0.05%) of the electrolyte. Such improvement of stability is particularly effective in an aqueous composition.

Preferably, the pH of the composition of the present invention is from about 6.0 to about 10.0, more preferably from about 7.0 to about 9.0.

Preferably, the composition is a topical composition, more preferably, a skin care composition.

A. Electrolyte

The composition of the present invention includes an electrolyte. Herein, "electrolyte" refers to a compound which releases a cation (*e.g.*, metal ion) when dissolved in emulsion (water containing solution).

The level of the electrolyte depends on the compatibility of its valency. For example, a flocculation value by a divalent salts, is four times of that by a monovalent salts (*e.g.*, square of valency). Preferably, the composition of the present invention contains from about 0.05% to about 10% of the electrolyte, more preferably from about 0.1% to about 10%, more preferably from about 1% to about 5%. The electrolyte useful herein is preferably substantially pure.

The electrolyte is further selected depending upon its compatibility with a crystalline inorganic mineral clay, a peptizer, a carrier, and optional ingredients. The electrolytes useful herein include inorganic salts, organic salts, and mixtures thereof. Preferably, the inorganic salts useful herein include a compound for further improving moisturization. Examples of the inorganic salts useful herein include potassium carbonate, potassium chloride, potassium sulfate, potassium sulfite, sodium carbonate, sodium chloride, sodium sulfate, sodium sulfite, sodium bisulfate, sodium bisulfite, calcium carbonate, calcium chloride, calcium sulfate, magnesium carbonate, magnesium chloride, magnesium sulfate, zinc chloride, zinc sulfate, aluminum chloride, aluminum sulfate, and mixtures thereof; more preferably sodium chloride, potassium chloride, magnesium sulfate, zinc sulfate, or mixtures thereof.

Preferably, the organic salts useful herein include a compound generally used as a preservative and pH adjuster. Nonlimiting examples of the organic

salts useful herein include disodium ethylenediaminetetraacetate (EDTA-2Na), trisodium ethylenediaminetetraacetate (EDTA-3Na), tetrasodium ethylenediaminetetraacetate (EDTA-4Na), sodium benzoate, sodium citrate, and sodium salycylate.

The electrolyte useful herein can also be classified by any purpose and/or benefits. In one embodiment, EDTA-2Na is an electrolyte, but commonly used as a preservative.

B. Crystalline Inorganic Mineral Clay

The composition of the present invention includes a crystalline inorganic mineral clay. Herein, "crystalline inorganic mineral clay" and "CIM clay" refer to a clay having a bundle of crystalline layers.

Preferably, the composition contains from about 0.01% to about 20% CIM clay, more preferably from about 0.1% to about 10%, still more preferably from about 1% to about 5%. It is believed that low levels of the CIM clay in combination with high levels of the electrolyte such as NaCl and EDTA-2Na (*i.e.*, more than 0.1%) will result in insufficient stability of compositions. It is also believed that high concentration (*i.e.*, more than 20%) will cause decreasing solubility of the CIM clay in composition.

The CIM clay useful herein includes any clay which is generally used as a thickener in compositions. High levels of electrolyte tends to decrease the viscosity of the composition. Without being bound by theory, it is believed that the CIM clay useful herein can contribute to maintaining an aesthetically and physically desirable viscosity in compositions containing an electrolyte. Preferably, the CIM clay of the present invention is a synthetic clay.

The structure of CIM clay is generally a bundle of individual crystalline layers (*e.g.*, bundles of platelets). When the CIM clay is added into water, the water causes the bundle of the CIM clay to separate into individual platelets. Cationic components (*e.g.*, metal ions) on the surface of each platelet of the CIM clay are released into water. Simultaneously, a small positive charge on the edges of platelets is derived due to the localization to the surface negative charges. These separated platelets are bonded by positive charges on the edges corresponding to the surface negative charge, reducing the surface charges, and thereby forming a structure referred to as a "card house structure."

The electrolyte of the composition generally releases positive electric charges (*e.g.*, cations such as hydrogen or metal ions) when dissolved in

aqueous solution. These positive charges generally lead to instability of the composition, particularly in the case of an emulsion-type composition. Such positive electric charges can associate with negative charges of dispersed CIM clays, reducing such negative charges by neutralization of charges, resulting in reducing the repulsion forces in the emulsion. Therefore, it is believed that addition of optimum levels of positive charges significantly stabilizes the viscosity (*i.e.*, maintains a thick solution) of the composition, particularly in emulsion forms.

The CIM clay useful herein includes a two layered type (*e.g.*, Kaolin) and a three layered type. The three layered type includes an expanding bundle and an non-expanding bundle (*e.g.*, Talc). The expanding bundle includes Unlimited Layer Expansion (*e.g.*, smectites) and Limited Layer Expansion (*e.g.*, vermiculites). Such structures are described in Fragrance Journal, vol. 6, p.65-71 (1994).

Preferred smectites of the CIM clay herein include monmorillonites (bentonites), beidelites, nontronites, hectorites, and saponites. Suitable hectorite type clay is Laponite™ XLG commercially available from Laporte Industries Ltd. (Cheshire, UK).

C. Peptizer

The composition of the present invention includes a peptizer. Preferably, the composition contains from about 0.001 % to about 5% of the peptizer; more preferably from about 0.01% to about 3%.

It is believed that the peptizer tends to reinforce tolerance of electrolytes in a clay thickener system; thereby improving upon the stability benefits provided by the CIM clay. When high levels of the electrolyte are used in compositions, increased levels of CIM clay will also be required to prevent a reduction of the composition viscosity (gel network breaking).

It is also believed that the peptizer reacts with the positive charge on the edges of the clay platelets. This results in elimination of positive charge of platelets, thereby increasing repulsive forces between dispersed platelets. This means that negative charges in the CIM clay dispersion is also increased. Therefore, higher levels of positive charges of the electrolyte will be able to associate with such negative charges of the CIM clay for stabilizing a clay thickener system. Consequently, increased levels of CIM clay can be avoided by including a peptizer, and the stability of the overall composition will be maintained.

Peptizers useful herein include acrylate, bisulfate, bisulfite, carbonate, phosphate, pyrophosphate, silicate, sulfate, sulphonate, or polyphosphate, preferably phosphate or pyrophosphate.

The peptizer utilized in the composition of the present invention can be classified differently, for example, by derivative-basis such as sodium salts, magnesium salts, aluminum salts, potassium salts, calcium salts, zinc salts, or ammonium salts.

Preferred peptizers employed herein include sodium bisulfate, sodium carbonate, sodium chloride, sodium hydrosulfite, sodium phosphate, sodium pyrophosphate, magnesium carbonate, magnesium carbonate hydroxide, magnesium chloride, magnesium sulfate, potassium carbonate, potassium chloride, potassium sulfate, calcium carbonate, calcium chloride, calcium dihydrogen phosphate, calcium phosphate, and calcium sulfate; preferably sodium phosphate, and sodium pyrophosphate.

In certain embodiments, the peptizer used herein can be incorporated into the composition as a mixture with the crystalline inorganic mineral clay or may be bonded to the crystalline inorganic clay to form a thickener system. When the peptizer is incorporated as a mixture of the crystalline inorganic mineral clay or bonded to form a thickener system, the peptizer is preferably present in an amount of from about 0.1 % to about 20 % of the weight of the crystalline inorganic clay.

A preferred combination of the CIM and the peptizer is commercially available under the tradename Laponite™ XLS from Laporte Industries Ltd. (Cheshire, UK).

D. Emulsifying Carrier

The composition of the present invention contains an emulsifying carrier. The emulsifying carrier useful herein includes any dermatologically acceptable carrier within which the electrolyte, a crystalline inorganic mineral clay, and a peptizer can be incorporated to enable the particular material and optional components to be delivered to the skin at an appropriate concentration. The emulsifying carrier, thus, ensures that the particular material is applied to and distributed evenly over the selected target at an appropriate concentration. The emulsifying carrier may itself be inert or it can possess dermatological benefits of its own.

Concentrations of the emulsifying carrier can vary with the carrier selected and the intended concentrations of the essential and optional components. Preferably, the carrier is present in from about 1% to about 99%, more preferably from about 20% to about 95%.

In one embodiment, the emulsifying carrier contains an oil and water phase of the composition. Such emulsifying carriers may further include optional components. Compositions with both oil and water phase are described hereinafter.

The emulsifying carrier useful herein includes a hydrophilic liquid carrier, a hydrophobic component, an amphiphilic surfactant, and mixtures thereof.

1. Hydrophilic Liquid Carrier

The emulsifying carrier contain from about 1% to about 99% of the hydrophilic liquid carrier (HLC) by weight of total composition, more preferably from about 20% to about 95%. The HLC can contain water, or a combination of water and one or more water soluble or dispersible ingredients.

A preferred HLC can contain a dermatologically acceptable, non-aqueous hydrophilic diluent. Nonlimiting examples of hydrophilic diluents are organic hydrophilic diluents such as lower monovalent alcohols (*e.g.*, C_1 - C_4) and low molecular weight glycols and polyols, including propylene glycol, polyethylene glycol (*e.g.*, Molecular Weight 200-600 g/mole), polypropylene glycol (*e.g.*, Molecular Weight 425-2025 g/mole), glycerol, butylene glycol, 1,2,4-butanetriol, sorbitol esters, 1,2,6-hexanetriol, ethanol, isopropanol, sorbitol esters, butanediol, ether propanol, ethoxylated ethers, propoxylated ethers and combinations thereof.

2. Hydrophobic Component

The emulsifying carrier contain a hydrophobic component which contains a lipid, oil, oily or other hydrophobic component. Preferably, the emulsifying carrier contains from about 1% to about 98% of the hydrophobic component by weight of total composition, more preferably from about 1% to about 50%, and still more preferably from about 1% to about 30%. The hydrophobic component may be derived from animals, plants, or petroleum and may be natural or synthetic (*e.g.*, man-made). Preferred hydrophobic components are substantially water-insoluble. Preferred hydrophobic components are those having a melting point of about 25°C or less under about one atmosphere of pressure.

A wide variety of suitable hydrophobic components are known and may be used herein and numerous examples can be found in Sagarin, Cosmetics, Science and Technology, 2nd Edition, Vol. 1, pp. 32-43 (1972). Nonlimiting examples of suitable hydrophobic components include mineral oil, petrolatum, C_7-C_{40} straight and branched hydrocarbons, C_1-C_{30} alcohol esters, glycerides, alkylene glycol esters, propoxylated and ethoxylated derivatives, sugar ester, vegetable oils and hydrogenated vegetable oils, animal fats and oils, and C_4-C_{20} alkyl ethers of polypropylene glycols, C_1-C_{20} carboxylic acid esters of polypropylene glycols, and di-C_8-C_{30} alkyl ethers. Examples of hydrophobic components useful herein are set forth in U.S. Patent No. 5,306,514 and to Letton et al., issued April 26, 1994; Merck Index, Tenth Edition, Entry 7048, p. 1033 (1983); and International Cosmetic Ingredient Dictionary, Fifth Edition, vol. 1, p.415-417 (1993).

3. Amphiphilic Surfactant

The emulsifying carrier further contains an organic amphiphilic surfactant which is capable of forming smectic lyotropic crystals in product or when the product is being applied to the skin at ambient or elevated temperatures. Preferably the amphiphilic surfactant is capable of forming liquid crystals at a temperature from about 20°C to about 40°C. Preferably the amphiphilic surfactant is capable of forming smectic lyotropic liquid crystals. Once application of the product to the skin has been completed, liquid crystals may not be identifiable on the skin surface or stratum corneum. The amphiphilic surfactant is preferably present at a level of from about 0.1% to about 20% by weight of total composition, preferably from about 0.1% to about 10%.

Examples of amphiphilic surfactant useful herein are set forth in WO97/28785, to Tanner et al., issued August 14, 1998.

E. Optional Ingredients

As described hereafter, the emulsifying carrier may further contain a wide variety of water-soluble or water miscible optional ingredients which can perform one or more skin conditioning or skin treating functions.

Preferably, the optional ingredient is a dermatologically acceptable ingredient. The optional ingredient should be physically and chemically compatible with the essential components described herein, and should not unduly impair stability, efficacy or other use benefits associated with the compositions of the present invention. Preferred components of the

compositions of the present invention should be capable of being commingled in a manner such that there is no interaction which would substantially reduce the efficacy of the composition under ordinary use situations.

Preferably, the optional ingredient includes a pH adjuster, a humectant, a hydrophilic gelling agent, a silicone-containing phase, or mixtures thereof.

1. pH Adjuster

The emulsifying carrier may further contain a pH adjuster. Herein, "pH adjuster" refers to any component which is employed to increase or decrease the overall pH of the composition to an optimum pH, thereby preventing decomposition of ingredients (particularly the ascorbic acid compound). An optimum pH is subject to the selection of the ascorbic acid compound. For example, when the composition includes magnesium L-ascorbyl phosphate (MAP), the optimum pH is around 7.0 to about 8.0. Suitable pH adjusters herein include acetate, phosphate, citrate, triethanolamine and carbonate. A combination of the foregoing are often employed to adjust to a specific optimal pH for the composition. The total level of the pH adjuster is from about 0.01% to about 5.0% by weight of total composition, preferably, from about 0.5% to about 2.0%.

2. Humectant

The emulsifying carrier may further contain a humectant. Suitable humectants for use herein include sorbitol, propylene glycol, butylene glycol, hexylene glycol, ethoxylated glucose derivatives, hexanetriol, glycerin, glycine, hyaluronic acid, arginine, Ajidew (NaPCA), water-soluble polyglycerylmethacrylate lubricants and panthenols. A preferred humectant herein is glycerine (sometimes known as glycerol or glycerin). Chemically, glycerine is 1,2,3-propanetriol. Glycerine is especially preferred in the compositions of the invention from the viewpoint of boosting moisturization. Also preferred for use herein is butylene glycol. Particularly preferred from the viewpoint of boosting moisturization is a combination of glycerine and urea.

In the present composition, the humectant is preferably present at a level of from about 0.1% to about 20% by weight of total composition, more preferably from about 1% to about 15%, and especially from about 5% to about 15%.

Nonlimiting examples of humectants useful herein are set forth in U.S. Patent No. 5,306,516 and 5,306,515, to Letton et al., issued April 26, 1994.

3. Hydrophilic Thickening Agent

The emulsifying carrier may further contain a hydrophilic thickening agent. Preferably, the hydrophilic thickening agent is at a level from about 0.01% to about 10% by weight of total composition, more preferably from about 0.02% to about 5%. The hydrophilic thickening agent preferably has a viscosity (20°C, Brookfield RVT) of at least about 4000 mPa.s, more preferably at least about 10,000 mPa.s and especially at least 20,000 mPa.s.

Hydrophilic thickening agent can generally be described as a water-soluble or colloidally water-soluble polymer. Hydrophilic thickening agents useful herein include polysaccharides, gums, mucopolysaccharides (*e.g.*, hyaluronic acid, chondroitin sulfate), carboxylic acid polymers, crosslinked polyacrylate polymers, materials which are derived from natural sources (*e.g.*, Quince Seed) and mixtures thereof; preferably polysaccharides, gums, Agar, or mixtures thereof. See, for example, U.S. Patent No., 4,387,107, to Klein et al., issued June 7, 1983 and "Encyclopedia of Polymer and Thickeners for Cosmetics," R.Y. Lochhead and W. R. Fron, eds., Cosmetics & Toiletries, vol. 108, pp. 95-135 (May 1993).

4. Silicone-containing phase

The emulsifying carrier may further contain as either all or a portion of the oil phase or oil phases, a first silicone-containing phase comprising a crosslinked polyorganosiloxane polymer and a silicone oil. Preferably, the emulsifying carrier contains from about 0.1% to about 20% of the first silicone-containing phase by weight of the composition, more preferably from about 0.5% to about 10%, more preferably from about 0.5% to about 5%.

Preferably, the ratio of the crosslinked polyorganosiloxane polymer to the silicone oil is from about 1:9 to about 4:6, more preferably from about 2:8 to about 7:3, by weight of the first silicone-containing phase.

Nonlimiting examples of silicone-containing phase useful herein are set forth in U.S. Patent No. 5,733,535, to Hollingshead et al., issued March 31, 1998.

5. Others

Additional optional components which may be useful in the composition of the present invention include, vitamins and derivatives thereof (*e.g.*, tocophenol, tocophenol acetate, tretinoic acid, retinol, and the like); panthenol moisturizer such as D-panthenol; keratolytic agents/desquamation agents such as salicylic acid; proteins and polypeptides and derivatives thereof; water-soluble or

solubilizable preservatives preferably at a level of from about 0.1% to about 5%, such as Germall 115, methyl, ethyl, propyl and butyl esters of hydroxybenzoic acid, benzyl alcohol, EDTA, Euxyl™ K400, Bromopol (2-bromo-2-nitropropane-1,3-diol) and phenoxypropanol; anti-bacterials such as Irgasan© and phenoxyethanol (preferably from 0.1% to about 5%); soluble or colloidally-soluble moisturising agents such as hylaronic acid and starch-grafted sodium polyacrylates such as Sanwet™ IM-1000, IM-1500 and IM-2500 available from Celanese Superabsorbent Materials, Portsmith, VA, USA and described in USA-A-4,076,663; alpha and beta hydroxyacids; aloe vera; sphingosines and phytosphingosines, cholesterol; skin lightening/evenness agents; N-acetyl cysteine; coloring agents; perfumes and perfume solubilizers and additional surfactants/emulsifiers such as fatty alcohol ethoxylates, ethoxylated polyol fatty acid esters, wherein the polyol can be selected from glycerine, propyleneglycol, ethyleneglycol, sorbitol, sorbitan, polypropyleneglycol, glucose and sucrose. Nonlimiting examples include glyceryl monohydroxy stearate and stearyl alcohol ethoxylated with an average of from 10 to 200 moles of ethyleneoxide per mole of alcohol and PEG-6 caprylic/capric glycerides.

EXAMPLES

The following examples further describe and demonstrate embodiments within the scope of the present invention. The examples are given solely for the purpose of illustration and are not to be construed as limitations of the present invention, as many variations thereof are possible without departing from the spirit and scope of the invention. Where applicable, ingredients are identified by chemical or CTFA name, or otherwise defined below.

The components shown below can be prepared by any conventional method known in the art. Suitable methods and formulations are as follows:

Examples 1-6

Compositions of the present invention are prepared from the following ingredients using conventional formulating techniques.

(unit %)

Material Name	Example					
	1	2	3	4	5	6
Magnecium Carbonate	1.500			1.000		0.500
Zinc Sulfata			1.500		1.000	0.500
NaCl		3.000		1.000	1.000	1.000
EDTA-2Na	0.100	0.100	0.100	0.100	0.100	0.100
Laponite XLG		3.572	3.572			
Laponite XLS	3.800			5.000	4.000	6.000
Sodium Pyrophosphate		0.228				
Sodium Phosphate			0.228			
Methylparaben	0.210	0.210	0.210	0.210	0.210	0.210
Glycerine USP	7.000	7.000	7.000	7.000	7.000	7.000
Keltrol	0.200	0.200	0.200	0.200	0.200	0.200
1.3-Buthylene Glycol	0.400	0.400	0.400	0.400	0.400	0.400
Stearic Acid	0.100	0.100	0.100	0.100	0.100	0.100
PEG 100 Stearate	0.500	0.500	0.500	0.500	0.500	0.500
Stearyl Alcohol	0.480	0.480	0.480	0.480	0.480	0.480
Cetyl Alcohol	0.720	0.720	0.720	0.720	0.720	0.720
Propylparaben	0.180	0.180	0.180	0.180	0.180	0.180
Mineral Oil	1.330	1.330	1.330	1.330	1.330	1.330
Dimethicone	2.000	2.000	2.000	2.000	2.000	2.000
Sodium Citrate	1.000	1.000	1.000	1.000	1.000	1.000
De-Ionized Water	up to 100 %					

The compositions above described are suitably made as follows:

(1) Prepare a water dispersion of hydrous magnesium silicate and heat the dispersion up to about 75 °C;

(2) Dissolve water soluble contents except for (1) and Mg Carbonate, Zinc Sulfate and Sodium Chloride heat the solution up to about 75 °C;

(3) Mix (1) and (2) and keep the temperature at about 75 °C;

(4) Heat a mixture of surfactants, oil contents and silicone to about 80 °C;

(5) Add the mixture (4) into the water phase (3) followed by high pressure homogenizing;

(6) Add a separate water solution of Mg Carbonate, Zinc Sulfate and sodium Chloride, after the mixture (5) gets cooled down to below about 40° C.

out 40° C.

It is understood that the foregoing detailed description of examples and embodiments of the present invention are given merely by way of illustration, and

that numerous modifications and variations may become apparent to those skilled in the art without departing from the spirit and scope of the invention; and such apparent modifications and variations are to be included in the scope of the appended claims.

What is claimed is:

1. A composition comprising:
   (a) an electrolyte;
   (b) a crystalline inorganic mineral clay;
   (c) a peptizer; and
   (d) a emulsifying carrier;

wherein the composition is in the form of an oil-in-water emulsion.

2. The composition of Claim 1 wherein the emulsifying carrier is a hydrophilic liquid carrier, a hydrophobic component, an amphiphilic surfactant, or mixtures thereof.

3. The composition of Claim 2 wherein the composition comprises from about 0.05% to about 10% of the electrolyte.

4. The composition of Claim 3 wherein the electrolyte is an inorganic salt, an organic salt, or mixtures thereof.

5. The composition of Claim 4 wherein the composition has a pH of from about 6.0 to about 10.0.

6. The composition of Claim 5 wherein the composition comprises from about 0.1% to about 20% of the crystalline inorganic mineral clay.

7. The composition of Claim 6 wherein the peptizer is present in an amount of from about 0.1 % to about 20 % by the weight of the crystalline inorganic mineral clay.

8. The composition of Claim 7 wherein the peptizer is an acrylate, a carbonate, a phosphate, a pyrophosphate, a silicate, a sulfate, a sulphonate, a polyphoaphate, or mixtures thereof.

9. The composition of Claim 8 wherein the crystalline inorganic clay and the peptizer are bonded together to form a thickener system.

10. The composition of Claim 9 wherein the emulsifying carrier further comprises optional ingredients selected from the group consisting of a pH adjuster, a humectant, a hydrophilic gelling agent, a silicone-containing phase, and mixtures thereof.

INTERNATIONAL SEARCH REPORT

Inte..ational Application No
PCT/US 98/09348

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61K7/00 B01F17/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A61K B01F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE WPI Week 9151 Derwent Publications Ltd., London, GB; AN 91-373540 XP002090997 & JP 03 251516 A (KAO CORP.) , 11 November 1991 see abstract	1-4,6,7, 10
X	DATABASE WPI Week 8137 Derwent Publications Ltd., London, GB; AN 81-67091D XP002090998 & JP 56 095109 A (KANEBO LTD.) , 1 August 1981 see abstract	1-4,6,8, 10

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[X] Further documents are listed in the continuation of box C. [ ] Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
25 January 1999	03/02/1999

Name and mailing address of the ISA	Authorized officer
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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 98/09348

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE WPI Week 9208 Derwent Publications Ltd., London, GB; AN 86-329264 XP002090999 & JP 04 003253 B (SHISEIDO CO. LTD.) , 22 January 1992 see abstract	1-4,10

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